

REMARKS/ARGUMENTS

Interview Summary

In response to multiple phone calls to the Examiner Brian J. Assessor by the Applicants' representative, Rabindranath Dutta, Registration No. 51,010, a telephone conversation was conducted on May 4, 2007 with the Examiner, Brian J. Assessor, by the Applicants' representative, Rabindranath Dutta, Registration No. 51,010. During the course of the conversation the Examiner reiterated that the amendment dated 3/12/2007 had been entered, even though the indication in item 7 of the advisory action was ambiguous. The Examiner agreed that the comments at the end of the Advisory action entered the amendment dated 3/12/2007. Without agreeing with the Examiner's rationale for rejecting the claims, Applicants mentioned to the Examiner that it was possible that Applicants may pursue a Request for Continued Examination rather than an appeal.

Applicants submit that interview summary presented herein make the substance of the conversation/interview(s) of record to comply with 37 CFR 1.133. If the Examiner believes that further information on the interview(s) needs to be made of record to comply with the requirements, Applicants request the Examiner to identify such further information.

35 U.S.C. 102 and 103 based rejections and claim amendments

In response to the amendment dated 3/12/2007, the Examiner had rejected claims 1, 11, and 21 under 35 U.S.C. 102(b) as being anticipated by Bhaskaran (US 6,266,335). Claims 3, 13, and 23 had been rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran in view of Allen (US 7,003,693). Claims 4, 14, 24 had been rejected under 35 U.S.C. 103(a) as being unpatentable over Kandasamy (5,513,314) in view of Bhaskaran.

Applicants have amended the independent claims 1, 11, 21, added new dependent claims 31-42 and amended claims 3, 4, 13, 14, 23, 24 to depend on certain of the new dependent claims. Applicants are not conceding in this application that the claims 1, 11, 21, 3, 4, 13, 14, 23, 24 of the amendment dated 3/12/2007 are not patentable over the art cited by the Examiner, as the present claim amendments are only for facilitating expeditious prosecution of the Application.

Applicants respectfully reserve the right to pursue these and other claims in one or more continuations and/or divisional patent applications.

Independent claims 1, 11, 21

Amended independent claims 1, 11, 21 require
receiving an I/O command at a switch from a host;
if the I/O command is a write I/O, then writing data via the switch to a primary storage subsystem and a secondary storage subsystem, wherein the switch couples the host to the primary storage subsystem and the secondary storage subsystem, and wherein the data written to the primary storage subsystem and the data written to the secondary storage subsystem are the same;
receiving an indication of a failure of the primary storage subsystem at the switch; and
subsequently, directing a command from the host received at the switch to the secondary storage subsystem for completion by changing a source volume and a target volume in the command to correspond to volumes in the secondary storage subsystem, wherein the source volume and the target volume are for I/O operations, and wherein the changing is performed by a switching application in the switch.

The newly added claim requirements of receiving an I/O command at a switch from a host, and if the I/O command is a write I/O, then writing data via the switch to a primary storage subsystem and a secondary storage subsystem, wherein the switch couples the host to the primary storage subsystem and the secondary storage subsystem, and wherein the data written to the primary storage subsystem and the data written to the secondary storage subsystem are the same, may be found in at least original claim 5 of the application.

The Examiner has rejected claims 1, 11, and 21 under 35 U.S.C. 102(b) as being anticipated by Bhaskaran. In the advisory action dated 4/10/2007 the Examiner has indicated that although the switching application of Bhaskaran does not specifically specify source volumes and target volumes, the cited Bhaskaran uses labels of MAC source Address and MAC destination address, which according to the Examiner serve the same function of the source and target volumes of the claims. While Applicants do not agree with the Examiner that the MAC source Address and MAC destination address serve the same function of the source and target

volumes of the claim requirements, Applicants have amended the claims to include the requirements of:

receiving an I/O command at a switch from a host;

if the I/O command is a write I/O, then writing data via the switch to a primary storage subsystem and a secondary storage subsystem, wherein the switch couples the host to the primary storage subsystem and the secondary storage subsystem, and wherein the data written to the primary storage subsystem and the data written to the secondary storage subsystem are the same.

Applicants submit that with the new additional limitations the MAC source and destination addresses cannot teach or disclose the claim requirements of the source and target volumes of the claim requirements. It is clear from the above claim amendments that the claim requirements are with respect to source and target volumes and primary and storage subsystems and the MAC source and destination addresses of the cited Bhaskaran or the cited sections of the cited Bhaskaran do not teach or disclose the claim requirements.

Additionally, the cited Bhaskaran does not teach or disclose the newly added claim requirements of:

receiving an I/O command at a switch from a host;

if the I/O command is a write I/O, then writing data via the switch to a primary storage subsystem and a secondary storage subsystem, wherein the switch couples the host to the primary storage subsystem and the secondary storage subsystem, and wherein the data written to the primary storage subsystem and the data written to the secondary storage subsystem are the same.

Additional arguments provided earlier are given below.

The Examiner has rejected claims 1, 11, and 21 under 35 U.S.C. 102(b) as being anticipated by Bhaskaran (US 6,266,335). In the "Response to Arguments" dated 1/11/2007 the Examiner has indicated that the claim requirements of a source volume and a target volume in a command received at the switch from a host is disclosed in col. 6. lines 51-53 of the cited Bhaskaran. Applicants submit that col. 6, lines 51-53 of the cited Bhaskaran used in rejecting the claims mentions that "FIG. 3B illustrates the format of link field 320. Link field 320 has a Data Link source address field 380, a Data Link Layer destination address field 390 and type field 395". Applicants submit that the Data Link source address field 380 and the Data Link Layer

destination address field 390 of the cited Bhaskaran as referred to by the Examiner are MAC source address (Cited Bhaskaran: FIG. 3B, reference numeral 380) and MAC destination address (Cited Bhaskaran: FIG. 3B, reference numeral 390) respectively as can be seen in FIG. 3B of the cited Bhaskaran. Applicants submit that the term MAC as used in FIG. 3B of the cited Bhaskaran is an abbreviation for "Medium Access Control" and MAC source address and MAC destination address may comprise a unique address associated with a Network Interface Card. Applicants respectfully submit that source and targets volumes of the claim requirements are storage volumes and are different from the source address field 380 and the destination address field 390 of the cited Bhaskaran which appear to refer to unique addresses associated with Network Interface Card. Applicants also draw the attention of the Examiner to paragraph 28 of the Application filed by the Applicants to further support that the source and target volumes of the claim requirements are different from the source address field 390 and the destination address field 390 of the cited Bhaskaran.

Therefore, while the cited Bhaskaran may discuss a system where a switch changes source and destination MAC addresses, the claims require changing, by the switching application in the switch, the source volume and a target volume in the command to correspond to volumes in the secondary storage subsystem, and these claim requirements are neither taught nor disclosed by the cited Bhaskaran (col. 6, lines 51-53; col. 8, lines 56-59) used in rejecting the claims.

In particular, the cited Bhaskaran discusses switching source and destination MAC addresses whereas the claims require (i) a source volume and a target volume in a command received at the switch from a host; and (ii) changing, by the switching application in the switch, the source volume and a target volume in the command to correspond to volumes in the secondary storage subsystem; and these claim requirements are not taught or disclosed by the cited Bhaskaran.

For the above reasons independent claims 1, 11, 21 are patentable over the cited art.

Dependent claims 3-4, 13-14, 23-24, 31-42.

Additionally, claims 3-4, 13-14, 23-24, 31-42 depend directly or indirectly on the pending independent claims 1, 11, 21. Applicants submit that these claims are patentable over the cited art because they depend from claims 1, 11, 21 which are patentable over the cited art for

the reason discussed above, and because the combination of the limitations in the dependent claims and the base and intervening claims from which claims 3-4, 13-14, 23-24, 31-42 depend provide further grounds of distinction over the cited art.

New Dependent claims 31, 32, 33

New dependent claims 31, 32, 33 depend on independent claims 1, 11, 21 respectively and require that the switch be an I/O switch implemented in a fibre channel mechanism.

The new claim requirements may be found in at least paragraph 16 of the Application. Applicants submit that nowhere does the cited art teach, disclose or suggest that the switch is an I/O switch implemented in a fibre channel mechanism.

Amended dependent claims, 3, 13, 23

Amended claims 3, 13, 23 depend on claims 31, 35, 39 respectively and further comprise:

receiving a notification at the switch from a monitor application that traps an I/O alert corresponding to the failure, wherein the monitor application is coupled to a hardware unit coupled to the primary storage subsystem; and

holding an I/O request that resulted in the failure in a busy state at the monitor application.

Claims 3, 13, and 23 had been rejected under 35 U.S.C. 103(a) as being unpatentable over Bhaskaran in view of Allen.

The Examiner had earlier mentioned that col. 8, lines 46-49 and FIGs. 5A-5C of the cited Bhaskaran teach or suggest the claim requirement that the monitor application is coupled to a hardware unit coupled to the primary storage subsystem. Applicants submit that col. 8, lines 46-49 and other sections of the cited Bhaskaran discusses automated detection of failure of an IP server by a network flow switch. The network flow switch is different from the claim requirements of amended dependent claims 3, 13, 23 that the switch is an I/O switch implemented in a fibre channel mechanism, wherein the claim requirement that the switch is an I/O switch implemented in a fibre channel mechanism may be found in claims 31, 35, 39 on which amended claims 3, 13, 23 depend respectively.

Additionally, nowhere does the cited Allen or the cited Bhaskaran teach, disclose, or suggest the claims requirements of receiving a notification at the switch from a monitor

application that traps an I/O alert corresponding to the failure, wherein the monitor application is coupled to a hardware unit coupled to the primary storage subsystem, and holding an I/O request that resulted in the failure in a busy state at the monitor application.

For the above reasons claims 3, 13, 23 are patentable over the cited art.

Amended dependent claims, 4, 14, 24

Amended claims 3, 13, 23 depend on claims 31, 35, 39 respectively and further comprises:

receiving a notification at a monitor application that the primary storage subsystem is functioning properly, wherein the monitor application is coupled to a hardware unit coupled to the primary storage subsystem; and

synchronizing data in the secondary storage subsystem to the primary storage subsystem;
and

directing a command from the host received at the switch to the primary storage subsystem for completion.

Claims 4, 14, 24 had been rejected under 35 U.S.C. 103(a) as being unpatentable over Kandasamy in view of Bhaskaran.

Nowhere does the cited art Bhaskaran or the cited Kandasamy teach, disclose, or suggest the claims requirements of receiving a notification at a monitor application that the primary storage subsystem is functioning properly, wherein the monitor application is coupled to a hardware unit coupled to the primary storage subsystem, synchronizing data in the secondary storage subsystem to the primary storage subsystem; and directing a command from the host received at the switch to the primary storage subsystem for completion, in combination with the claim requirements of claims 31, 35, 39 (on which claims 4, 14, 24 depend respectively) that the switch is an I/O switch implemented in a fibre channel mechanism ,

For the above reasons claims 4, 14, 24 are patentable over the cited art.

New Dependent claims 32-34, 36-38, 40-42

The requirements for these new dependent claims may be found in at least original claims 6-10 of the Application.

Conclusion

For all the above reasons, Applicant submits that the pending claims are patentable over the art of record. Should any additional fees be required, please charge Deposit Account No. 09-0449.

The attorney/agent of record invites the Examiner to contact him at (310) 557-2292 if the Examiner believes such contact would advance the prosecution of the case.

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